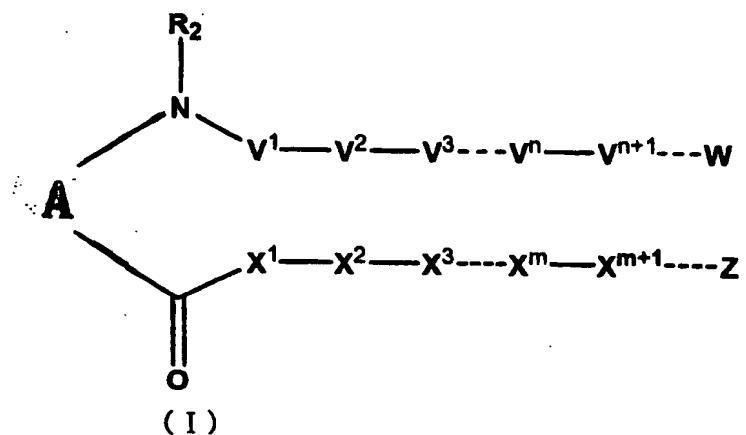


What is claimed is:

1. A ferrocene compound represented by the following general formula (I):

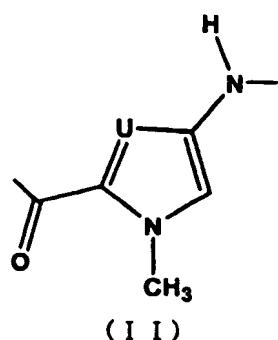
[Chemical Formula 1]



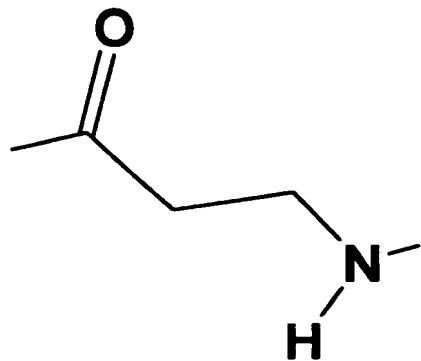
5

wherein "A" represents a divalent ferrocene-containing linker or ferrocene-1,1'-yl, R_2 represents a hydrogen atom or alkyl; "n" and "m" represent any natural numbers; and
 10 "V" and "X" represent the following general formula (II) or (II-1):

[Chemical Formula 2]



[Chemical Formula 3]

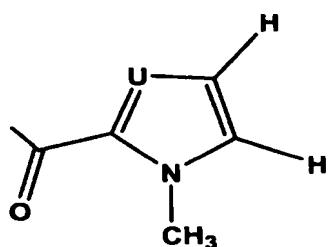


(II-1)

"W" represents the following general formula (III):

[Chemical Formula 4]

5

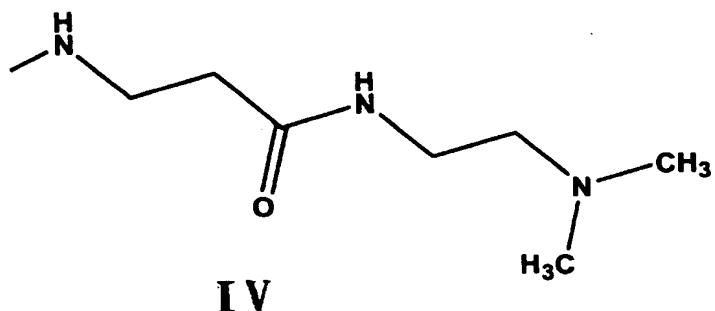


III

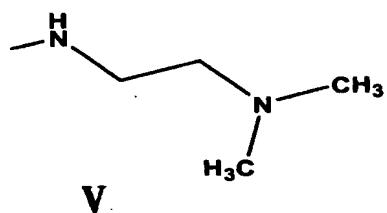
wherein "U" in the general formulae (II) and (III) represents a nitrogen atom, methine or hydroxymethine; and "Z" represents the following general formulae (IV) or (V):

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[Chemical Formula 5]



[Chemical Formula 6]



5

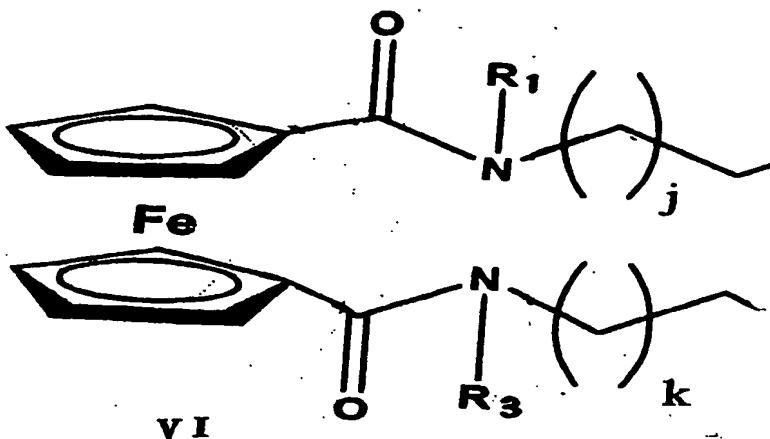
and both ends of each of V^n and X^m in the general formula (I) form a $(-\text{CO}-\text{NH}-)$ bond except that a bond on the side of the ferrocene-containing linker or ferrocene-1,1'-yl of $V1$ is $(-\text{CO}-\text{NR}_2-)$.

10 2. The ferrocene compound according to Claim 1 wherein "n" and "m" are natural numbers in the range of 3 - 20.

3. The ferrocene compound according to Claim 1 or 2 wherein the number of "n" is smaller by one than that of "m."

4. The ferrocene compound according to any one of Claims 15 1 - 3 wherein the ferrocene-containing linker is represented by the following general formula (VI):

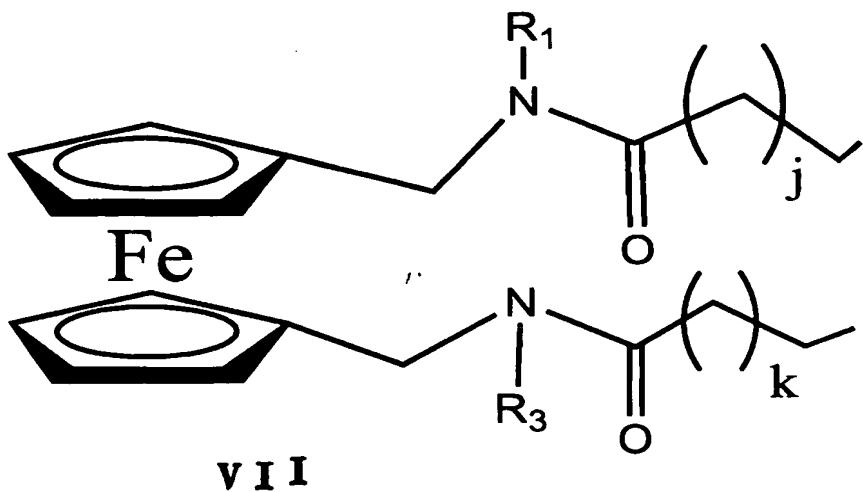
[Chemical Formula 7]



wherein R_1 and R_3 represent a hydrogen atom or alkyl; "j" and "k" represent the same or different integer of from 5 0 to 5.

5. The ferrocene compound according to any one of Claims 1- 3 represented by the following general formula (VII):

[Chemical Formula 8]



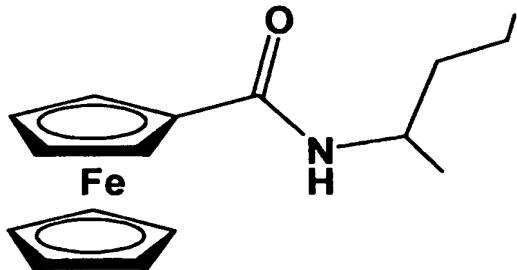
wherein R₁ and R₃ represent a hydrogen atom or alkyl; "j" and "k" represent the same or different integer of from 0 to 5.

6. The ferrocene compound according to any one of Claims 5 to 5 wherein "j" and "k" are 1.

7. The ferrocene compound according to any one of Claims 1 to 6 wherein R₁ and R₃ represent a hydrogen atom.

8. The ferrocene compound according to any one of Claims 1 to 3 wherein the ferrocene-containing linker is 10 represented by the following general formula (X):

[Chemical Formula 9]

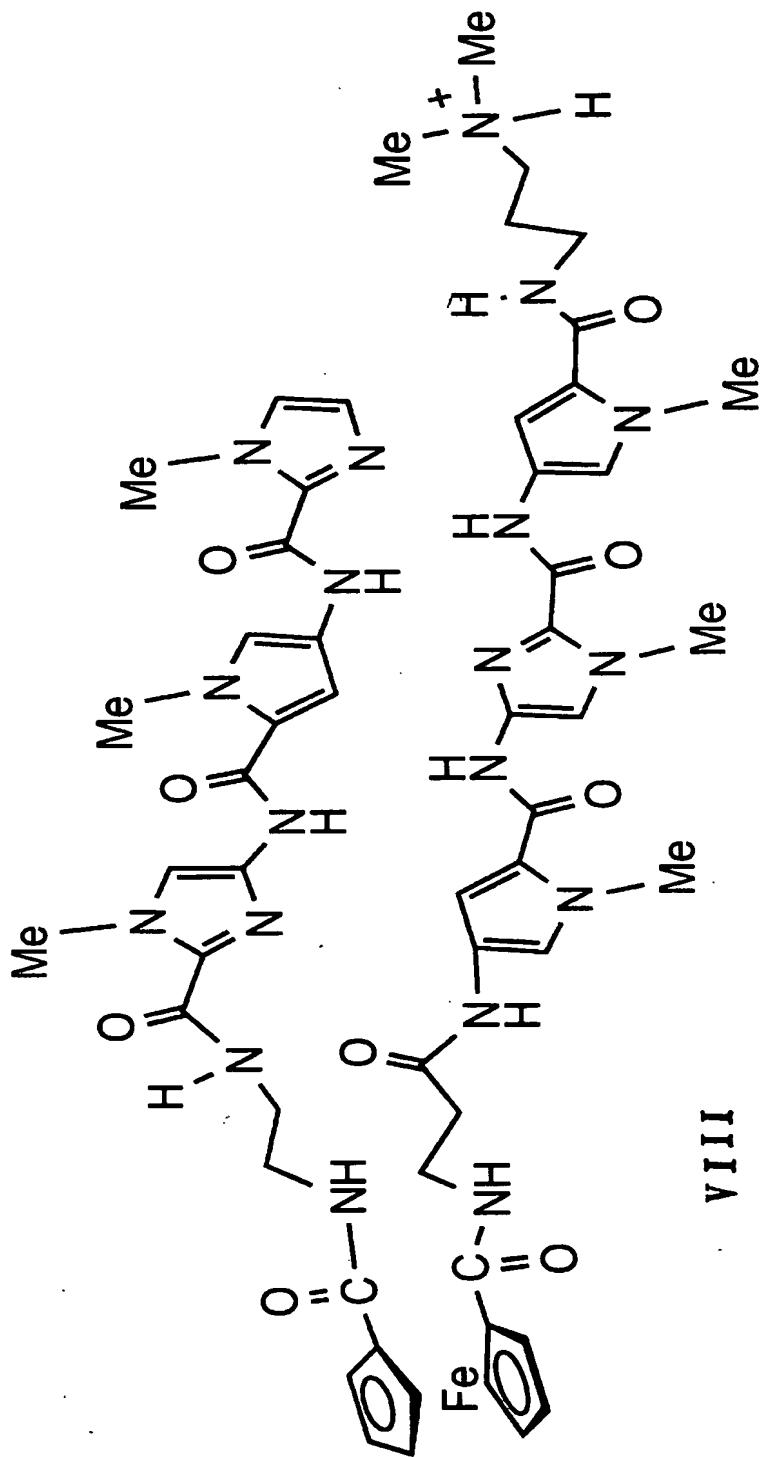


X

9. The ferrocene compound according to any one of Claims 1 to 8 wherein R₁, R₂ and R₃ represent alkyl having one 15 or several carbon atoms.

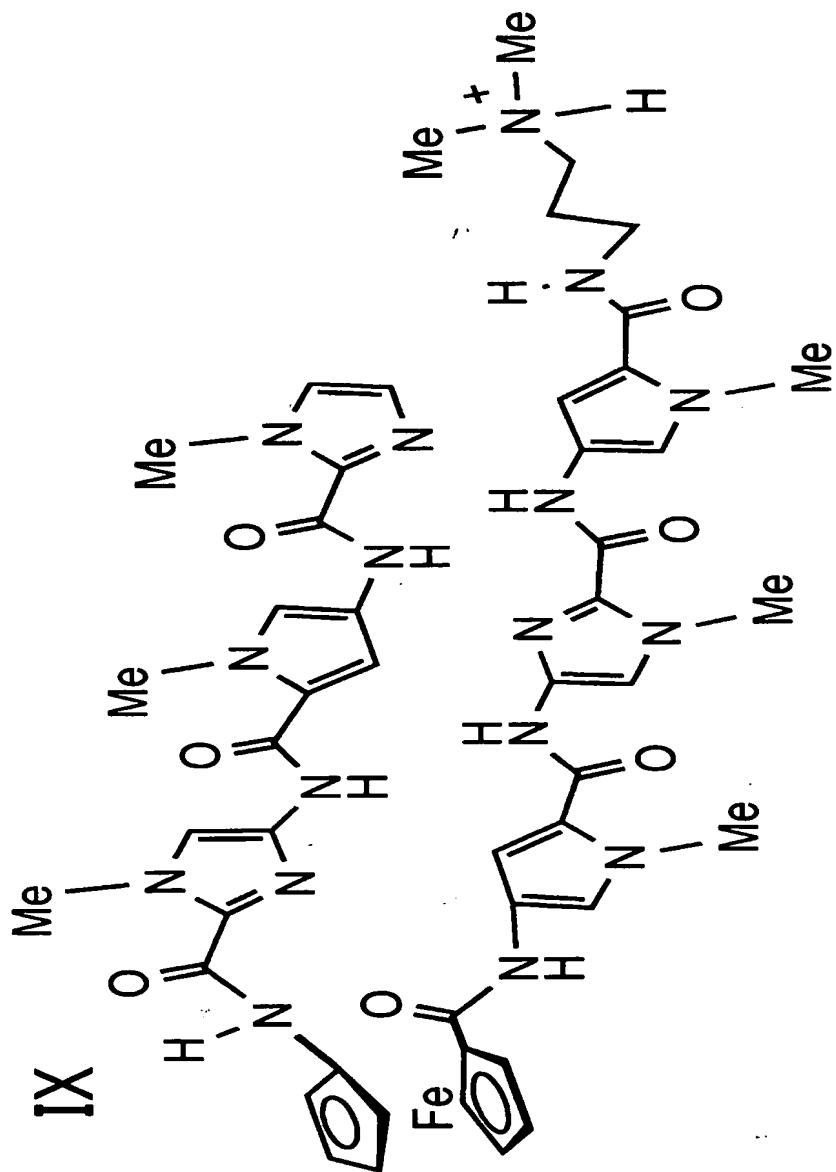
10. The ferrocene compound represented by the following formula (VIII):

[Chemical Formula 10]



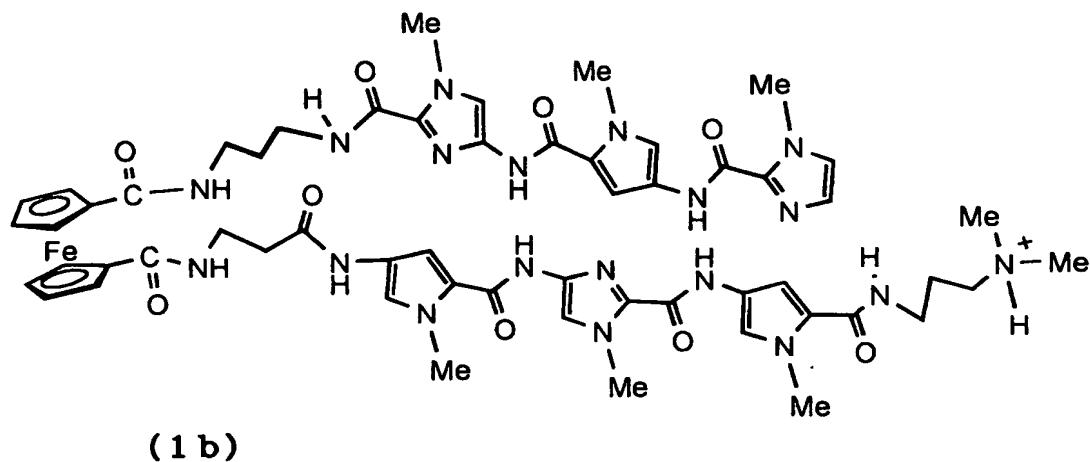
11. The ferrocene compound represented by the following formula (IX):

[Chemical Formula 11]



12. The ferrocene compound represented by the following formula (1b):

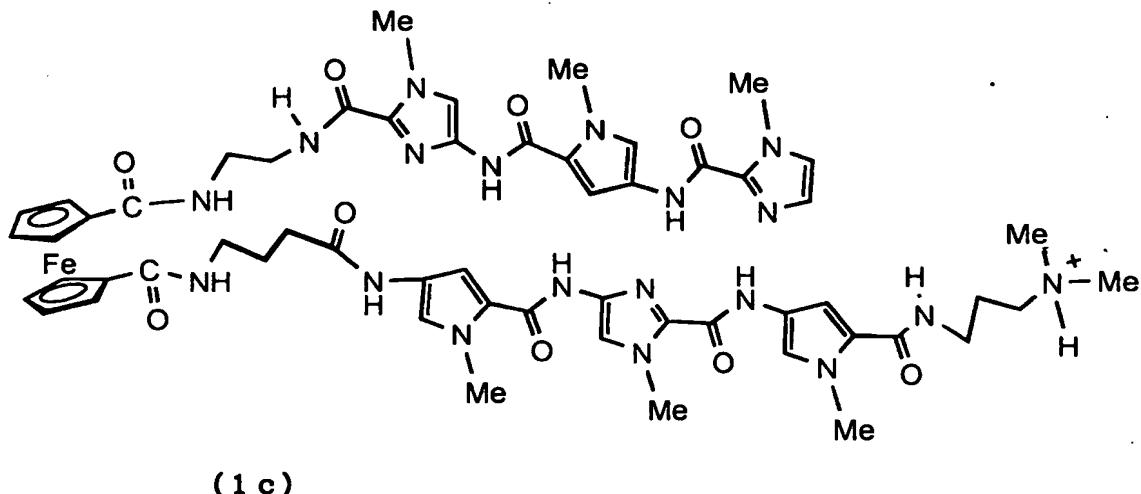
[Chemical Formula 12]



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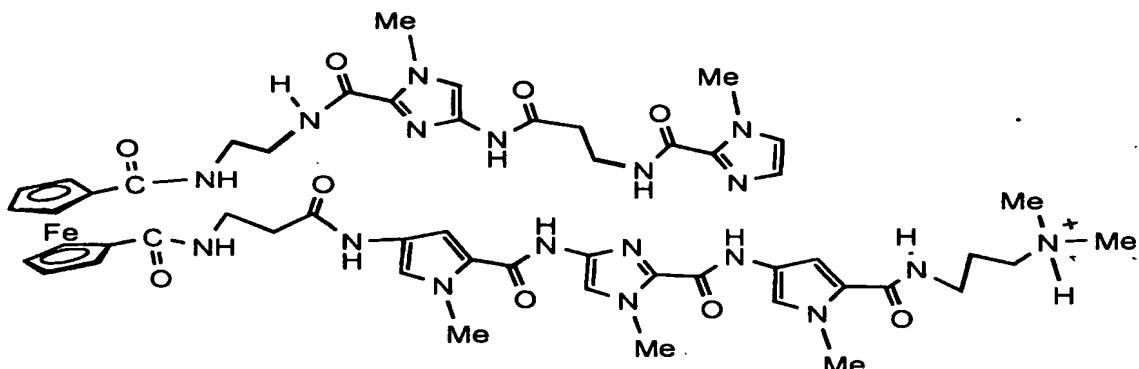
13. The ferrocene compound represented by the following formula (1c):

[Chemical Formula 13]



14. The ferrocene compound represented by the following formula (2):

[Chemical Formula 14]

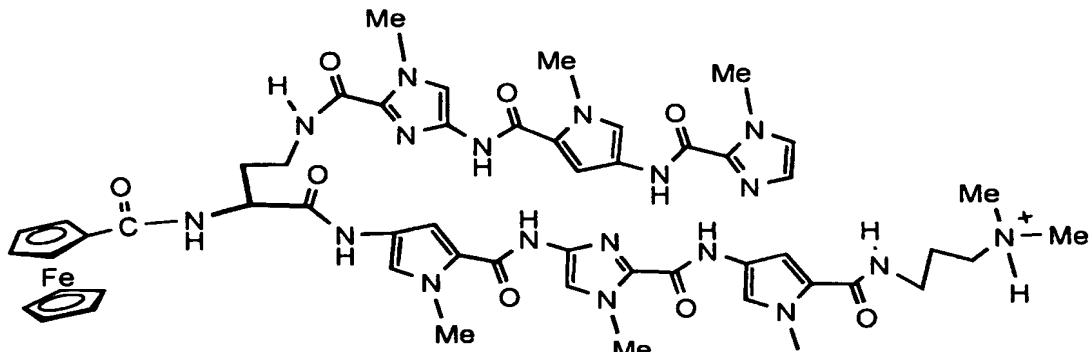


(2)

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15. The ferrocene compound represented by the following formula (3):

[Chemical Formula 15]



(3)

16. A method for the production of the ferrocene compound according to any one of Claims 1 to 15, comprising a condensation step with the use of ferrocene methyl dicarboxylate, aminoferroocene methyl carboxylate or ferrocene carboxylic acid as a starting material.

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17. A ligand consisting of the ferrocene compound according to any one of Claims 1 to 15 for sequence-specific detection of double-stranded nucleic acid molecules.

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18. A method for the electrochemical detection of double-stranded nucleic acid molecules with the use of a compound that can sequence-specifically bind to the double-stranded nucleic acid molecules.

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19. A method for electrochemical detection of double-stranded nucleic acid molecules according to Claim 18 with the use of the ligand according to Claim 17.

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20. The method according to Claim 16 which uses the ligand according to Claim 17 wherein each pair of "V" and "X" located in the general formula (I) at a position corresponding to G/C and A/T (U) base pairs in subject double-stranded nucleic acid molecules is composed of imidazole derivative/pyrrole derivative and pyrrole derivative/pyrrole derivative, respectively.

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21. A method for electrochemical detection according to any one of Claims 18 to 20 wherein the double-stranded nucleic acid molecules are formed on solid phase.

22. A method for electrochemical detection according to
Claim 21, which uses DNA microarray.
23. A method for the detection of single nucleotide
polymorphism (SNP) by the method for electrochemical
detection according to any one of Claims 18 to 22.
- 5 24. An apparatus or device for the electrochemical
detection with the use of the ligand for
sequence-specific detection of double-stranded nucleic
acid according to Claim 17.
- 10 25. The apparatus or device for the electrochemical
detection according to Claim 24, which is DNA microarray.

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